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Soil Conservation

JANUARY 1965
VOL. XXX NO. 6

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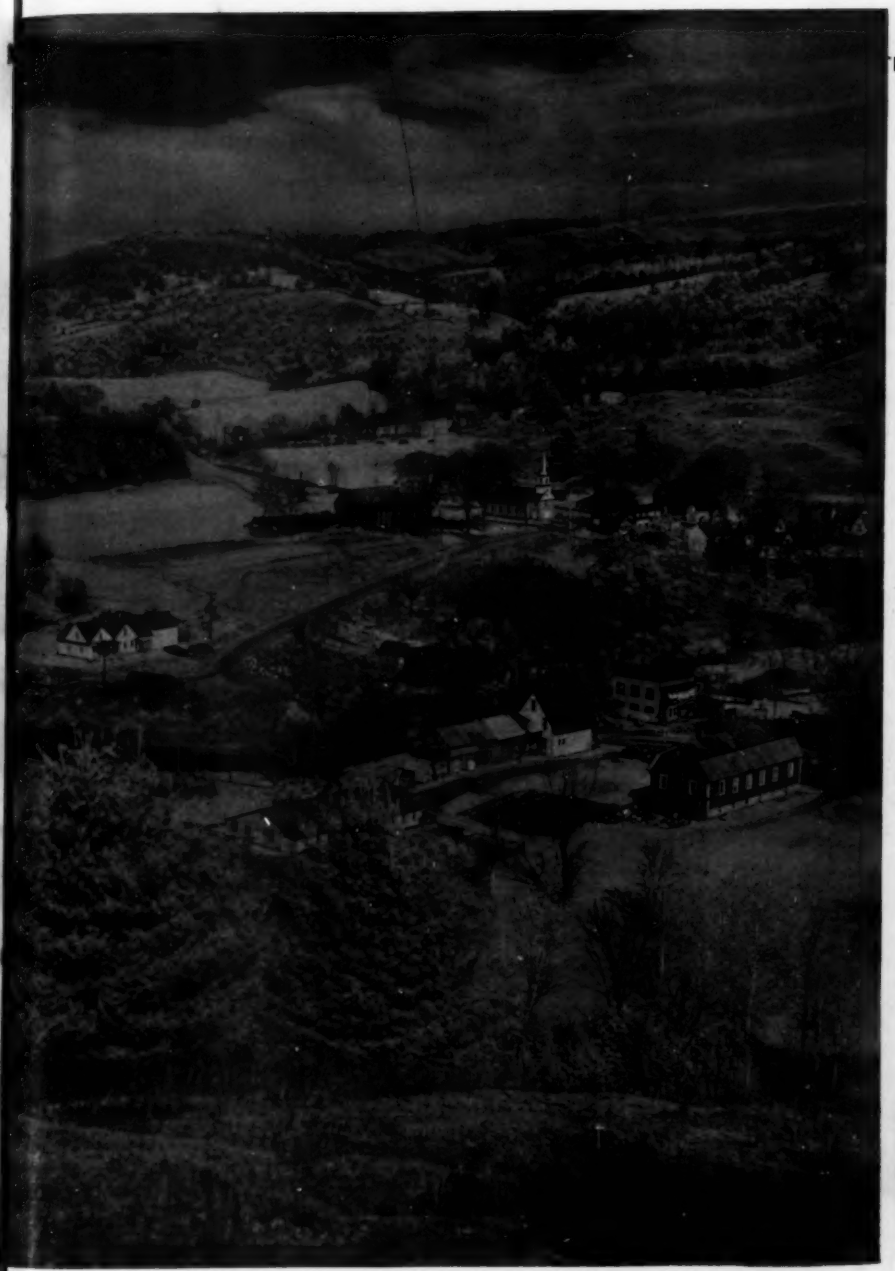

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SOIL CONSERVATION SERVICE

U. S. DEPARTMENT OF AGRICULTURE

JANUARY 1965
VOL. XXX, NO. 6

Soil Conservation

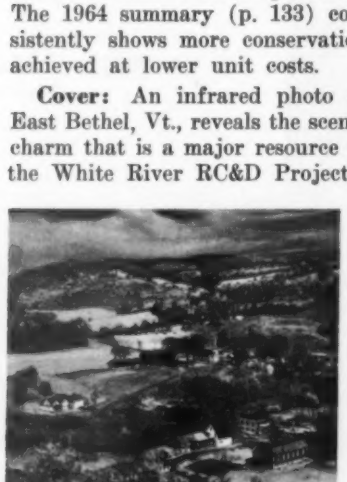
RC&D . . .

The meaning of an abstract label, such as Resource Conservation and Development, is difficult to grasp at best, and doubly so when reduced to mere initials. But we expect this new alphabetical tag to be as durable in the language of conservation as R&D (Research and Development) in industry. So we invited our Resource Development Division to explain the background and philosophy of the idea (p. 127) and describe the 10 pilot projects (p. 129).

ABC: Local initiative is the ABC of RC&D, and early experience shows that private enterprise need not wait for Government help once the potentials are seen. Fieldmen report three exciting examples from Minnesota's vacationland (p. 123), Vermont's White River (p. 126), and the Upper Rio Grande (p. 131).

ADP: Automatic data processing makes possible SCS's revised progress and time reporting system. Fieldmen who have worried with the chore of coding and accounting now can take pride in the gains in efficiency resulting from use of the data in our operations. The 1964 summary (p. 133) consistently shows more conservation achieved at lower unit costs.

Cover: An infrared photo of East Bethel, Vt., reveals the scenic charm that is a major resource of the White River RC&D Project.



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Crow Wing Canoe Trail

First move in RC&D project brings new life to Minnesota economy

THE people of five Minnesota counties are prodding dormant economic opportunities into life through a Resource Conservation and Development project.

They're working toward more jobs, more trade, and a "flock" of tourists every summer for Swift, Pope, Kandiyohi, and Wadena counties and the eastern portion of Otter Tail County.

A glimmer of things to come is the Crow Wing Canoe Trail in Wadena County, a lively local project that is the first of the 80-odd separate measures in the West Central Minnesota RC&D master plan to reach fruition.

Accessible Wilderness

The Crow Wing River winds its way through, as a Canoe Trail brochure says, "75 miles of beautiful and accessible wilderness . . . with fish of every variety, sandy beaches for swimming fun, and wildlife galore."

On a total cash outlay of about $3,000, coupled with a lot of imagination and hard work, the area has been transformed into a vacation haven with land and facilities worth $180,000.

In a speech dedicating the Canoe Trail June 17, Minnesota Governor Karl Rolvaag called it "one of the most exciting contributions to the art of resource management in our State's history."

The trail starts at Blueberry Lake near Menahga and ends at McGivern Park near Staples. The river averages about 100 feet wide and 3 feet deep. With a current of about 4 miles an hour, canoeists can make progress even while resting. The usual rate of travel is 20 or 30 miles a day, but four "outfitters" in business on the river will transport vacationers to any starting point and pick them up wherever they desire to stop. The outfitters also can provide any equipment needed.

It hasn't been possible to get a clear idea how many people are using the trail; the canoeing parties are pretty well separated from one another by their differences in rate of progress and bends in the river. But as many as 50 canoes have been counted on the 75-mile course at one time.

More to Come

Ed Patson, outfitter at Menahga, believes there will be four to five times as much business in 1965.

"Many people came this past year just to try it out," said Patson. "A father and son would take 1 day this time. Next summer they will take 3 days and bring the whole family.

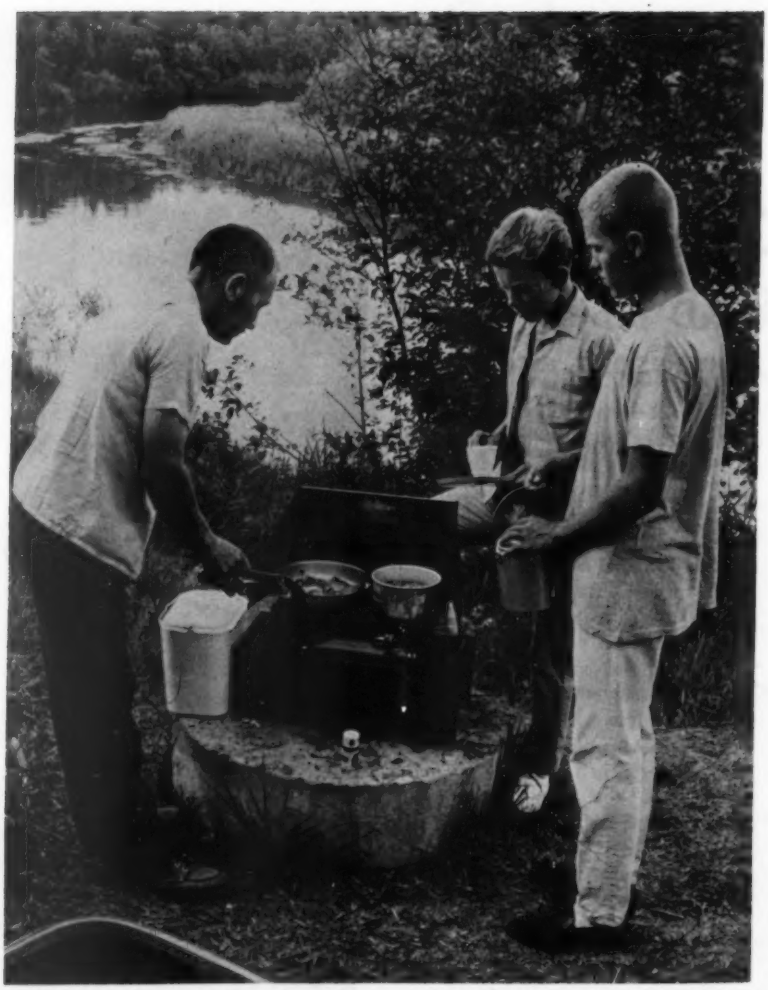
"Counselors for Boy Scouts and Girl Scouts checked it over so they could make plans. All were enthusiastic except four persons who ran into bad weather.

"People like the freedom, the wilderness atmosphere, the variety of bird and animal life."

What's around the bend? Could be a nice beach, swimming hole, or campsite to reward this father and son team on the Crow Wing Canoe Trail (photo courtesy John E. Rife).

Patson rented 20 canoes last year. He thinks he will need 50 this year.

The trail's presence has been felt in the nearby communities, too. Frank Green, a Menahga druggist, reported a run on camera equip-



Dad and the boys take "time out" for a meal of freshly caught fish along the Crow Wing Canoe Trail (photo courtesy John E. Rife).

ment and film. Local grocery stores noticed increased sales to vacationers. And some people have been looking at local property with retirement plans in mind, Green said.

As in other planned projects, most of the ingredients for success were already there—a meandering stream; scenic shores with a suggestion of wilderness; and people who knew and appreciated the aesthetic appeal of their homeland.

Especially, John Rife. Rife provided the spark.

As Outdoor Writer Jim Kimball said in the Minneapolis *Sunday Tribune*: "Every community needs a John Rife. He is a farmer, a soil district supervisor, chairman of the Rural Areas Development program, an insurance man, and above all, a promoter of everything that will benefit Wadena County."

Here's the way Rife describes events leading to development of Wadena's newest tourist attraction:

Land and People Conference

"It came from the inspiration I got from attending the Duluth Land and People Conference in September of 1963 and hearing Secretary Orville Freeman's talk. We knew at that time that Federal help would be coming through a resource development project, but we could see no reason we shouldn't begin doing what we could ourselves. The Crow Wing River looked liked the place to start.

"I first contacted the county game manager to find out where all the tax-forfeited land lay along the river. The Wadena Soil and Water Conservation District Board then looked the various areas over and asked the county commissioner to set aside land we had picked out for campsites. Where there was no county land available, we approached other owners. In the end, we got a real good combination of campsites.

Rod and Gun Clubs Help

"Later we went to each Rod and Gun Club in the towns along the river to see if its members would put some labor into developing the campsites. They were enthusiastic and cooperative as were the literally hundreds of people who helped with the canoe trail in one way or another.

"The next step was to start promotion. To finance a brochure we talked to the Chambers of Commerce and in no time at all had collected a jackpot. With it, we got out an attractive folder. With support of the local papers, Jim Kimball's articles in the *Minneapolis Tribune*, and ads in national magazines, we got wide publicity. Requests for information began to pour in, 6,000 of them in the first 2 months of the summer. In all, we have now distributed 20,000 copies of our brochure to every State in the Union.

"Our last big job was to get wells, fireplaces, and recreational and sanitary facilities at each of the campsites. We made a deal with the State Conservation Department in which we agreed to furnish public access if they would provide picnic tables and toilets. With donated money we bought

the iron for the grills on the fireplaces. Sebeka FFA boys did the welding at nine different sites. Boy Scout troops further developed the campsites. The County Highway Department constructed the access roads."

Government Too

Many others helped in the project. SCS Work Unit Conservationist Don Benrud provided technical information, including drawings for camp facilities. SCS Biologist Hans Uhlig, RC&D Project Conservationist Bill Oemichen, and Ed Weiland, area game manager for the State's Division of Game and Fish, took an active part. The Minnesota Power and Light Company, the Northwest Paper Company, and cities of Staples and Nimrod all provided some land.

This high level and variety of local contribution and effort is the "proof of the pudding" for the project approach in improved land use and resource development. Authors of the Food and Agriculture Act of 1962 authorizing RC&D projects recognized that the most orderly way to get the job done was through local talent and initiative, with coordination and help by local, State, and Federal agencies.

Many other projects in the West Central RC&D Project are moving along, too. Some are in Wadena County—the city-owned campground and picnic area at Menahga where 40 acres of jackpine harvest will pay for facilities, and the Sunny Brook park development on 35 acres east of Wadena.

An Open-End Plan

RC&D Chairman Clint Haroldson, who operates a farm near Willmar in Kandiyohi County, points out that the master plan is "a long-range plan and an 'open-end' one," which means that parts may be added as the work progresses.

There is considerable variation in the land and its needs. Haroldson mentioned the desire of Swift County to expand sugar beet production and refining and plans for a 1,300-acre wetland development for waterfowl.

Pope County has its eyes on redevelopment of Lake Emily for waterfowl and construction of an alfalfa dehydrating plant.

Kandiyohi County is aiming at silt removal from Foot Lake, a recreation lake, a big overland ditch for flood control, and erosion control through a watershed project.

Wadena and Otter Tail both want a soil fertility study for land management purposes. Otter Tail folks want to give their wood industry a lift and have a plan for a pilot wood products processing plant.

Four counties are trying to accelerate conversion of marginal cropland to other uses. Three have requested accelerated ACP assistance for special purposes.

Price tag on the whole operation for the next 5 years is nearly $4.5 million. The money will come from many sources—local, State, and Federal. Local residents are hoping to get extra financial help through two recent pieces of legislation, the Minnesota Natural Resources Development Act and the National Land and Water Conservation Fund Act.

Meanwhile, technical assistance is being made available. SCS has allotted $100,000 for planning and construction operations in the current fiscal year.

As for the people, in the words of Clint Haroldson, "They will continue to do as much as they can with their own abilities. There's no substitute for self help."♦

Improved campsites along the Crow Wing Canoe Trail give family groups like this one a chance to relax and enjoy the solitude of the outdoors (photo courtesy John E. Rife).

Life for White River Area

New businesses open as citizens take stock in preparing RC&D project plan

By Eugene C. Hanchett

Project Coordinator, White River Resource Conservation and Development Project SCS, Randolph, Vt.

"LOCAL folks' eyes have been opened to economic opportunities and some have already gotten into action as the result of initial stock-taking for the RC&D Work Plan."

These are the words of Sheldon Dimick, Chairman of the White River Resource Conservation and Development Steering Committee and President of the Randolph National Bank in Vermont.

Dimick's bank is a good example of action already taken. It has opened two new branch offices as a result of the preliminary work done on the RC&D work plan.

"The opportunities for providing more banking services to the people of the area and for establishing the branch banks stuck out like a sore thumb as a result of the initial inventory of the area," said Dimick.

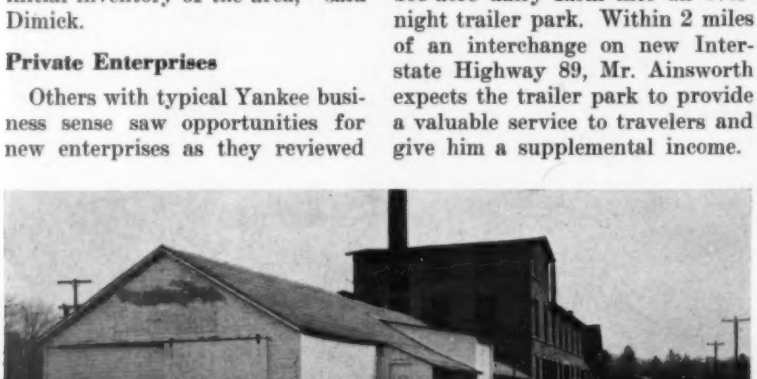
Private Enterprises

Others with typical Yankee business sense saw opportunities for new enterprises as they reviewed the White River Valley's resources and economic needs in the course of preparing the RC&D project proposal. Among them:

The Dura-belle Manufacturing Company, producer of parquet flooring, has begun operation in an idle building formerly used as a corn-canning factory. When in full operation, the company will employ about 15 people year-round and use about 90,000 board feet of kiln-dried hardwood lumber a month.

Putnam Blodgett of Bradford is constructing a 14-acre lake to pro vide a boating and swimming facility for a new youth camp with a capacity of about 60. This enterprise will be in addition to his 80-cow dairy farming operation.

George Ainsworth of Sharon has recently converted 5 acres of his 105-acre dairy farm into an overnight trailer park. Within 2 miles of an interchange on new Interstate Highway 89, Mr. Ainsworth expects the trailer park to provide a valuable service to travelers and give him a supplemental income.



A manufacturing plant for parquet flooring is in full operation before the project plan is put into effect.

Plateau Acres, Inc., of Bradford, a local corporation, has purchased 25 acres of land and is building about 20 new houses. This housing development was stimulated when it became apparent that people wishing to come to Bradford to live or work could not find suitable houses for either rent or purchase.

A corporation known as the Valley Bowling, Inc., consisting of local people, has opened the White River Valley's only bowling establishment.

Beginning of an Answer

These enterprises and others like them are a start toward answering the perplexing problems facing the area in the early 1960's. A decreasing number of dairy farms, idle land, and diminishing population posed a real challenge to the 19,000 inhabitants of the 23 towns of the present RC&D project area.

Local leaders such as Sheldon Dimick and Edson E. Gifford, Sr., chairman of the White River Soil and Water Conservation District Board, busied themselves in making an application for such a project. The application, endorsed by Governor Philip Hoff and approved by the Secretary of Agriculture, resulted in the White River Resource Conservation and Development Project being approved for planning on February 3, 1964.

Project sponsors, the White River Development Corporation and the White River district, and endorsers, the White River Valley Association and the Central Connecticut Valley Association, immediately went to work on the planning phase of the project.

According to Dimick, more than 100 local people, including Federal and State agency representatives working with the SCS project coordinator, were involved in preparing the project work plan. Also, more than 50 meetings were held with local groups, civic clubs, and committees before the plan was completed. ♦

Opportunities in Resource Development

The new RC&D projects team local leaders, public agencies to improve economy

By John W. Barnard
Resource Development Division, SCS

OF the new opportunities given the Department of Agriculture in the Food and Agriculture Act of 1962, one of the most significant is the responsibility for Resource Conservation and Development projects.

These projects are initiated and sponsored by local people to provide additional economic opportunities through accelerated conservation, development, and multiple use of natural resources. They are self-help projects that will aid materially in making a better life in rural America.

Teamwork between public agencies and local leadership assures success of the projects. Secretary Freeman designated the Soil Conservation Service to administer RC&D project activities. Several other USDA agencies participate according to their normal responsibilities: Farmers Home Administration, Forest Service, Federal Extension Service, Office of Information, Agricultural Stabilization and Conservation Service, Economic Research Service, Office of Rural Areas Development, Farmer Cooperative Service, and Rural Electrification Administration. Other Federal agencies assist as needed.

Districts Take Lead

Soil and water conservation districts have taken the lead at the local level in developing leadership for RC&D projects. In fact, district governing bodies have been sponsors or cosponsors in all project applications for planning assistance received so far.

Size of a project is determined by local needs and desires. In all project applications to date, with one exception, the area has been greater than a single county and approximately ¼ to 3 million acres. A project area must be small enough for effective local leadership but large enough to encompass the natural resources and related developments which directly affect the economy of the area.

Ten pilot projects were designated by Secretary Freeman on February 3, 1964, for USDA assistance in preparing comprehensive work plans. As of December 1, six of these plans have been completed and approved for operations.

Why a Project Approach

The "project" approach has advantages over the usual program basis of most USDA activities in which services are available nationwide to eligible participants.

The project approach limits the area, gives sharp focus to use of funds and authorities, and concentrates the effort. Local leadership is most effective because its influence and interest are centered in the project area.

Coordinated effort by local interests and all Federal, State, and local agencies results in a truly comprehensive project plan for each area.

Local leadership is the key. It organizes and directs the technical and financial resources of all participants to carry out the project plan. All segments of the community—rural, suburban, and urban—can coordinate their activities toward a unified approach in meeting local problems and improving resource use. Often, the very act of taking stock of resources and planning together for their use stimulates people to carry out measures on their own.

RC&D Funds Help

RC&D funds may be used for additional technical help to speed up soil surveys and plan and apply conservation measures on individual operating units.

RC&D funds may be used also to help finance structural measures for flood prevention, erosion or sediment control, irrigation, or drainage that will provide community or group benefits. Generally, these special funds are available only for structures that cannot be installed in Public Law 566 watershed projects or through ACP pooling agreements.

RC&D funds provide direct assistance to community or group enterprises, such as for roads or plants for storage and processing of farm and nonfarm products.

Farmers Home Administration loans can be made to State and local public bodies and private nonprofit organizations to help meet the local share of development costs. Interest rates correspond to current Government borrowing. To be eligible, borrowers must: (1) Have authority to borrow money; (2) pledge security; (3) provide bond; (4) be able to repay; (5) be able to receive and disburse funds;

and (6) be able to raise revenue by some method. Nonprofit organizations must be organized under State law.

The 1964-65 Cropland Conversion Program will be used to the fullest extent possible in furthering RC&D objectives. A major need in several project areas is conversion of land now producing surplus crops to other income-producing uses.

RC&D accomplishments will encourage the flow of private investment capital into local activities. The resulting increased income and higher level of employment will reduce out-migration from the area.

The First Step—Application

Sponsors of RC&D projects must have legal authority to sponsor project activities or facilities. Usually eligible are soil and water conservation districts, county governing bodies, municipalities, towns, local and State agencies, irrigation districts, public development corporations, and similar groups.

Other local groups and organizations may endorse the projects. For example, County Rural Areas Development Committees have been an important factor in stimulating interest in RC&D projects.

The sponsors draw up a project application outlining the resource problems and development opportunities as they see them. SCS and other agencies can help in this activity.

After approval by the Governor of the State, the application is forwarded to USDA for review and approval for planning assistance.

The Second Step—A Work Plan

After USDA approval of the application, the SCS State Conservationist appoints a project coordinator to help local sponsors develop a comprehensive work plan and to serve as a focal point in coordinating assistance from the many State, Federal, and local agencies. The Project Coordinator is a member of the SCS Area Conservationist's staff.

In a long-range plan for resource development, not all the needs can be adequately inventoried or described at the time of preparation. The plan usually describes in some detail measures of high priority that can be started within the next few years. Others that require further inventory and study are indicated in less detail or simply named. Generally, the project sponsors invite proposals from all sources in the area.

When the plan is completed, sponsors submit it to the Governor or the designated State agency. If it is approved, the SCS State Conservationist sends it to the Administrator. Review copies are sent to USDA and other agencies concerned, and to the Subcommittees for Agriculture Appropriations of the House and Senate.

Planning is a continuous process and can never be considered final. Work plans may be supplemented annually or as necessary to reflect changing conditions and the current actions of the project sponsors.

The Third Step—Operations

If the work plan is approved by the Secretary of Agriculture, after agency and Congressional review, the project is ready for actual operations.

A coordinated approach is essential in carrying forward project operations. Sponsors must set priorities, arrange for cooperation of local agencies or groups, and establish major policies. They may elect to appoint a steering or executive committee for screening requests and advising the sponsoring groups. Many activities or project measures will be carried out entirely with local resources and for these the sponsors may simply act as a clearing house or suggest ideas.

The soil and water conservation district has an important place in project operations because of its authority under State law to carry out broad land use programs. Other State and local governmental units also have an important place since they can act as contracting agencies, receive Federal or other funds, and operate and maintain works of improvement.

Federal agencies accelerate present programs such as technical conservation help, cost sharing, Public Law 566 projects, and loans for farm and group work. Land managing agencies, such as USDA's Forest Service and agencies in the Department of the Interior, accelerate conservation and development activities on public lands to provide additional employment and contribute to expansion of the local economy.

Additional forestry assistance is provided by the State forestry agency under cooperative arrangements with USDA.

State and local agencies have a prominent role in project activities. The Extension Service, Conservation Department, State and county highway departments, and numerous others are asked to help.

The future for RC&D projects is bright as a means of helping to improve the beauty and economic well-being of rural areas. The projects will help people help themselves in building a better America. ♦

Taking in Summer Boarders A Century-old Practice

Vacation farms are not new in New England.

"Guests have been vacationing here on our farm ever since they traveled in stagecoaches and carriages," one farmer explained. "My great grandparents started this place in 1823, and the family began taking guests about 100 years ago. Guests are still coming."

Accepting summer guests is a traditional way of supplementing farm income in New England, reports a new USDA publication, "New England Farm Vacation Businesses" (Agr. Econ. Rpt. 60). ♦

First 10 RC&D Projects Show Scope of Activities

WHAT is a Resource Conservation and Development Project like? A look at the 10 pilot projects already authorized gives some idea of what we can expect of this new type of conservation activity.

The primary requisite for an RC&D project is a need to intensify and speed up conservation work and natural resource development to improve the economy of an area.

While watershed projects are limited to 250,000 acres each, RC&D projects may include as much as 1 to 2 million acres. Most of them include more than one county.

In February the Secretary of Agriculture authorized 10 RC&D projects for USDA assistance in preparation of work plans. The projects were initiated and sponsored by local people as self-help programs of rural areas development.

Common Objectives

All projects have in common land and water potentials that could significantly improve the area economy. The 10 pilot projects—in fact, most of the 25 applications received to date—include the following objectives in varying degrees:

(1) Water resource development for flood prevention, recreation, wildlife, domestic, agricultural, municipal, or industrial use. All the projects include one or more small watershed projects (Public Law 566).

(2) Acceleration or completion of the soil survey.

(3) Accelerated conservation planning and land treatment.

(4) Conversion of cropland to grass, trees, wildlife, and recreation use.

(5) Recreation developments through multiple use of land and water, using existing resources and creating new ones.

(6) New industries to process agricultural and woodland or specialty products.

(7) Improved marketing of agricultural and livestock products.

(8) Long-range planning that will coordinate public efforts in the area.

Yet, each project is different in resources, in problems, and in planned solutions. Here are thumbnail descriptions of the unique features of each of the 10 pilot projects:

Gwinnett County, Ga.

The project area covers 280,000 acres near Atlanta that is undergoing rapid change from an agricultural to an urban economy. The project is sponsored by the Upper Ocmulgee Soil and Water Conservation District and the Gwinnett County Commissioners. The sponsors propose to:

(1) Acquire and develop three large nature preserves for public use.

(2) Develop industrial parks for new or enlarged plants and attract new industries.

(3) Increase fish and wildlife development and improve management skills of private operators.

(4) Develop a variety of income-producing recreation enterprises to serve the metropolitan area.

Lincoln Hills, Ind.

The area includes over a million acres along the Ohio River in Crawford, Harrison, Perry, and Spencer counties. The soil and water conservation districts of the four counties are sponsors, and the project is endorsed by the four county Rural Areas Development Committees. Planned measures include:

(1) Develop income-producing recreation on private land and encourage tourism.

(2) Employ a recreation specialist.

(3) Install rural waterlines.

(4) Develop arts and crafts industries.

(5) Devote more land to grass and intensify livestock production.

West Central Minnesota

The area of 2,404,000 acres includes all of Swift, Pope, Kandiyohi, and Wadena counties and the eastern part of Otter Tail County. The soil conservation districts and county boards of supervisors are the sponsors. Project measures are designed to:

(1) Install and develop 43 specific recreation and wildlife measures, including the Crow Wing Canoe Trail, restoration of a dam on Wing River and a lake on Blueberry River, a dam on Leaf River, a number of public parks, and privately owned recreation enterprises.

(2) Establish processing industries, such as alfalfa dehydrating plant, sugar-beet plant, woodchip plant, pallet plant, central maple syrup collection system and plant.

(3) Establish a tree and shrub nursery to supply 50 counties.

(4) Train more than 800 physically handicapped persons in vocational skills.

(5) Convert cropland on 350-400 farms to grassland and develop beef cow-calf operation.

Northern Rio Grande, New Mex.

The project area comprises 2,879,123 acres in Taos, Rio Arriba, Santa Fe, and Los Alamos counties. The project sponsors are the soil and water conservation dis-

tricts, county commissioners, councils of the cities of Espanola and Santa Fe and the town of Taos, and the County Rural Areas Development associations. Project measures are designed to:

(1) Develop recreation facilities on 23 areas immediately and more than 100 later. Recreation enterprises are expected to contribute more than other resources to the economy in the next decade.

(2) Rehabilitate or improve 231 group irrigation systems.

(3) Construct 36 access roads to recreation and other areas.

(4) Improve 1,473,000 acres of rangeland on 205 operating units in 43 community groups.

(5) Improve and manage for multiple use 142,000 acres of private commercial forest and 1,320,000 acres of National forest.

(6) Install 57 processing and marketing facilities for fruit, chile, and other specialty crops and wood products.

(7) Provide vocational training for local people.

Upper Willamette Valley, Oreg.

Located in the southern part of Willamette River Basin, the area includes parts of Lane, Linn, Benton, and Douglas counties, totaling 2,925,890 acres. Forests and woodlands comprise 79 percent of the land and include the largest block of virgin Douglas-fir timber in the world. Sponsors are the five soil and water conservation districts in the project area. Project plans include:

(1) Sustained yield from the forest resources with a balanced system of harvest on private and publicly owned timber.

(2) Development of additional local wood manufacturing and processing plants.

(3) Changes in cropping pattern to intensive truck, fruit, and berry crops.

North Idaho

The project area of 2,243,703 acres is located in the panhandle of northern Idaho and a small area of Spokane County, Wash. Sponsors are the soil and water conservation districts of Kootenai, Benewah, and Latah counties, Idaho, and Latah-Rock Creek District, Wash. Project measures are designed to:

(1) Revitalize privately owned timber industry by improved management and conservation.

(2) Seek a sustained yield of forest products on adapted sites.

(3) Develop markets for the small woodland owner.

Penn Soil, Pa.

An area of 1.5 million acres covers Crawford, Mercer, and Venango counties in northwestern Pennsylvania. The project is sponsored by the soil and water conservation districts and county commissioners. The work plan includes:

(1) Construction of two major lakes for recreation and residence sites and recreation developments on others.

(2) Construction of six waterfowl and wildlife marshes and refuges.

(3) Providing planning assistance to municipalities in rapidly changing rural-urban areas of about 121,000 acres.

South Dakota

The project covers 1,068,440 acres in Bon Homme and Charles Mix counties. The area lies along the Missouri River adjacent to Fort Randall Reservoir and Lewis and Clark Lake above the City of Yankton. A major problem is sediment deposition in the reservoirs. Sponsors are Fort Randall Conservancy Sub-District and three soil and water conservation districts. Objectives are to:

(1) Control deposition with structures to trap sediment.

(2) Accelerate land treatment on 311,000 acres of cropland, range, and pasture.

(3) Develop recreation facilities to supplement the attraction of the large lakes.

White River, Vt.

The project area of 635,000 acres includes 23 towns in parts of Orange, Windsor, Rutland, and Addison counties in east central Vermont. The sponsors are the White River Soil and Water Conservation District and the White River Valley Association. Project measures are designed to:

(1) Develop new recreation facilities in the Green Mountain National Forest and on private land.

(2) Construct one large lake and several smaller ones for boating, fishing, and other recreational uses.

(3) Develop water resources for municipal and industrial uses.

(4) Conduct an educational program for farmers to include farm management counseling, forest management and wood utilization, improved leasing agreements, supplemental farm enterprises, and family partnership and property sale agreements.

Pri-Ru-Ta, Wis.

An area of more than 2 million acres in north central Wisconsin includes Price, Rusk, and Taylor counties. Project sponsors are the soil and water conservation districts. Seventy-five percent of the total labor force is employed in agriculture, forestry, and related processing and wood industries. Project measures include:

(1) Creation of 26 new flowage lakes of 50 acres or more and many smaller ones for recreation.

(2) Development of 50 shallow wetland wildlife areas annually for the next 4 years.

(3) Construction of 50 miles of access roads and 250 miles of "tote" roads annually for the next 4 years on privately owned, county, and State forests.

(4) Establishment of two county-owned youth camps and two or more State and Federal camps for year-round educational and recreational use.

(5) Study of utilization and marketing of forestry products. ♦

Alliance for Progress . . .

Northern Rio Grande RC&D Project Awakens Area

By Richard B. Bowen
Range Conservationist, SCS, Taos, N. Mex.

THERE is growing hustle and stir in northern New Mexico today. Communities are reawakening. The talk everywhere is of the plans that are drawn and ready . . . and of the work that is going on.

Work? Si, senor, of course. For, you see, the Northern Rio Grande Resource Conservation and Development Project has triggered action on a broad front.

It was more than 360 years ago that Juan Onate and his gallant band of caballeros established the first white settlement in Southwestern United States.

Despite many hardships, the colonists established new colonies throughout the area. The settlers lived off the land, raised crops, and stock.

But life was not always easy. Economic and social problems have multiplied over the centuries.

Chili pods, here seen drying in the sun, are a high-return specialty of the Espanola Valley (photo courtesy of New Mexico Department of Development).

Shoulder to Shoulder

Despite the historical importance and the scenic, mineral, agricultural, and manpower resources of the area, the people have only now rediscovered the vast potential of their lands.

The 1960's marked the beginning of a gigantic redevelopment of northern New Mexico by the people themselves. Citizens of several racial origins are working shoulder to shoulder with local, State, and Federal agencies in the rebirth of this historical scenic wonderland. The preparation of the RC&D work plan has revealed many places where there was no need to wait, where if people are willing they can find many sources of help to solve the problems that seemed hopeless for so long.

Take the Cabresto irrigation system, for example. The system long needed overhauling. The water loss was enormous, and the shortage, especially in the critical crop season, was costly. To say that water is life in the valley is to state the obvious.

The farmers served by the system learned in the planning that they could pool their cost-share assistance from the Agricultural Conservation Program and, with technical help from the Soil Conservation Service and more cost-share help from the State Engineer's office, build their needed diversion works, and line the ditches that were so inefficient.

Irrigation water users place concrete to line La Puebla Community Ditch for more effective water control.

Irrigation Projects

So, the Cabresto project is going ahead. The total job will cost $50,000. The local owners will contribute $15,000 and operate and maintain the project.

Add to this effort the work in other systems—San Cristobal, J. M. Barela, La Puebla, and El Sombrillo—and you have a part of the explanation of the new feeling of achievement in the area.

There are other places where work is going ahead, in projects

stimulated by the planning in the Northern Rio Grande Project.

The 7-mile road to the Los Pinos River fishing and recreational area is finished. It cost $47,000 and meant 1,020 man-days of work at good pay. It is expected to increase visitor use of the area three or four times.

The recreational area development at the Red River Hatchery, with a new bridge across Red River, is almost ready.

A member of the Velarde Fruit Growers Association, with local financing, built a packing shed for the season's fruit crop. This development came as a result of the appraisal, in the course of project planning, of the potential in the industry with improved facilities. The Association has applied to the Farmers Home Administration for a $50,000 loan to buy processing and cold storage equipment.

Recreation Areas

The Camp May Recreational Area, with Los Alamos County paying the bill, is nearing completion. Camping, picnic, and parking areas are included.

Meantime, the planning and drafting of designs for construction go ahead. There are many other irrigation improvement projects, all sorely needed.

Flood damage, especially to the irrigated croplands in the valley, has been a common and depressing factor. Seven applications for projects under the Watershed Protection and Flood Prevention Act have been made. Other structures of this kind are proposed with RC&D assistance.

Tourism and income-producing recreation are recognized as representing vast potential. Many other projects are in this direction, designed to make the tourist welcome and his stay more enjoyable.

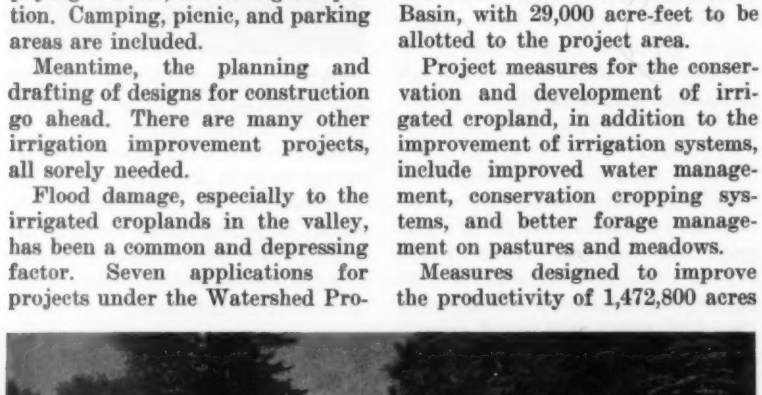
There are 1,320,000 acres of National Forest land and 142,000 acres of commercial forests. Harvesting and processing of forest products are envisioned in the plan.

Roads and trails are considered important in the opening of the area to its potential. City, county, State, and Federal agencies are cooperating.

Water is the key to expansion of the area's agriculture, and the San Juan-Chama Project of the Bureau of Reclamation represents the principal opportunity for increasing water resources. The project provides for the annual diversion of 110,000 acre-feet from Colorado's San Juan River to the Rio Grande Basin, with 29,000 acre-feet to be allotted to the project area.

Project measures for the conservation and development of irrigated cropland, in addition to the improvement of irrigation systems, include improved water management, conservation cropping systems, and better forage management on pastures and meadows.

Measures designed to improve the productivity of 1,472,800 acres of rangeland include coordinated land treatment by private landowners and public land agencies. These measures will involve brush control, range seeding, erosion control, fencing, community livestock water development, and proper management of forage resources.



The Northern Rio Grande RC&D Project area provides an abundance of camping, hiking, picnicking, hunting, and fishing opportunities.

Orchard crops are an important part of the economy in the irrigatde valleys of northern New Mexico.

Legislation Needed

Legislation will be needed to clear the way for some of the needed improvements, such as the establishment of boundaries and land titles, a prerequisite to the granting of some kinds of credit.

The sponsors of the project—among them the State of New Mexico, Rural Areas Development associations, and the Abiquiu-Vallecitos, Espanola Valley, Pojoaque-Santa Cruz, and Taos soil and water conservation districts—estimate that the annual income to the area will be increased by more than $6 million within 3 years after the project is operational. They say it will mean more than 1,000 full-time jobs or the equivalent.

A local writer has called the project a "homemade kind of Alliance for Progress." That is getting close. The people of northern New Mexico are developing their resources for a better way of life. ♦

Soil and Water Conservation and Resource Development

Summary of Activities and Accomplishments of the Soil Conservation Service, 1964

BROAD planning for community-wide benefits from resource conservation and development claimed increasing attention of the Soil Conservation Service in fiscal year 1964.

Upon designation of the first 10 Resource Conservation and Development (RC&D) projects by the Secretary of Agriculture, SCS assigned project coordinators for them and provided technical assistance to local sponsors in preparing project work plans. Throughout the Nation, SCS increased consultive services to planning agencies, organizations, and individuals by some 35 percent over the level of a year ago.

Meantime, continued assistance to private landowners and local agencies of government brought accelerated progress in applying needed conservation measures to the land.

Efficiency of Operation

The results were recorded in a 3-percent increase in a number of conservation plans prepared by soil conservation district cooperators, 20 percent more watershed projects under construction, 30 percent more contracts signed in the Great Plains Conservation Program, and increases of 10 to 30 percent in the establishment of several major conservation practices on the land.

During the year, SCS provided direct services to 1,123,801 land owners and operators, an increase of 8 percent over the previous year. Of these, 753,425 applied one or more conservation practices, an increase of 13 percent over the number in 1963.

The general increase in conservation accomplishments in fiscal 1964 was achieved with less than 1 percent increase in manpower or funds.

The Soil Conservation Service used 16,532 man-years of personnel in all programs in 1964, compared to 16,433 in 1963. Expenditures of all funds totaled $207,787,000 in 1964 and $193,176,000 in 1963.

The revised progress and time reporting system of SCS, using automatic data processing and matching expenditures against specific accomplishment items, now provides comparisons for 3 full years. These records show that the efforts of SCS to increase efficiency of operations have produced substantial gains in many areas.

For example, the 132,036 new conservation plans and revisions prepared in 1964 were obtained at an average cost of $234 per plan and 55 cents per acre, compared to $242 per plan and 59 cents per acre in 1963. This amounted to a 3-percent reduction in cost per plan and 7-percent reduction in cost per acre.

The time devoted to assisting land owners and operators prepare conservation plans resulted in 39 plans per man-year in 1964 compared to 36 per man-year in 1963, an increase of 8 percent.

The number of land owners and operators assisted increased from 94 per man-year in 1963 to 103 in 1964, a gain of 10 percent, and the number of services performed increased from 280 per man-year in 1963 to 300 in 1964, a gain of 7 percent.

The cost per owner or operator assisted declined from $85 in 1963 to $82 in 1964, or 4 percent. The cost per service performed declined from $29 to $28, or 3 percent.

Sixty-seven percent of the cooperators receiving assistance in 1964 actually applied one or more conservation practices, compared to 64.2 percent who did so in 1963.

Soil surveys proceeded at an average rate of 32,321 acres per man-year and at a cost of 30 cents per acre in 1964, compared to 33,124 acres and 28 cents in 1963.

All the foregoing items are performed mainly with funds appropriated for assistance to soil conservation districts. The manpower used in district operations in 1964 was actually 95 man-years less than in 1963—12,261 compared to 12,356. Total funds expended for district operations, including reimbursable items, amounted to $106,786,492 in 1964 and $103,166,801 in 1963.

Comprehensive Planning

A significant increase in broad resource planning occurred in several States during 1964.

In addition to the 10 pilot RC&D projects, SCS participated in many areas as a member of local committees and interagency groups engaged in resource and land use planning. The Service contributed especially by providing basic data and resource maps based on soil surveys, the Conservation Needs

Inventory, and related technical information.

Such planning was especially active in the rural-urban areas of the Northeast, the Northern Great Lakes area, Appalachia, and the Ozark region.

Many soil conservation districts broadened their programs to include district wide resource development and associated measures that would result in community-wide economic benefits. By the end of fiscal 1964, 1,319 or nearly half of the districts had adopted modernized programs and signed new basic memorandums of understanding with the Department covering their broadened activities.

SCS in fiscal 1964 provided 84,000 consultive services to planning agencies, organizations, and individuals, compared to 62,000 in 1963.

Developing Recreation Resources

The Soil Conservation Service increased its services to land owners and operators interested in establishing income-producing recreation enterprises in 1964.

Nearly 13,000 soil conservation district cooperators made plans to install one or more such enterprises, a 43-percent increase over the previous year. Of these, more than 600 converted their operations primarily to recreation.

These enterprises resulted in devoting more than 206,000 acres of farm and ranch land to recreational use.

Cropland Conversion

Substantial conversions of cropland to other uses resulted from the application of needed land treatment in watersheds and in establishing conservation plans on farms and ranches in soil conservation districts.

Exact figures are not available on the net effects of these adjustments, but records of conservation practices applied in fiscal 1964 indicate that between 2 and 3 million acres of cropland was shifted to other uses as a result of these programs.

The major part of this acreage was converted to grassland. This included most of the 2.5 million acres of pasture and hayland planting done in fiscal 1964, 169,488 acres of range seeding on converted land, and 115,689 acres of grassed waterways established.

In addition to the grass planting, 90,517 acres of cropland was converted to woodland, 32,164 acres to wildlife and recreation uses, and 57,569 acres to other land uses.

Soil Conservation Districts

The number of operating soil conservation districts increased from 2,942 to 2,971 in fiscal 1964. Forty-four new districts were organized and 15 were discontinued as a result of consolidation, subdivision, or other changes in status.

At the end of the fiscal year, the districts included 1,739,207,836 acres or 94 percent of the land in farms and 98 percent of the farms and ranches in the 50 States, Puerto Rico, and the Virgin Islands.

Conservation Planning.—Soil conservation districts assisted by SCS added 115,772 new cooperators, operating 41,566,765 acres of land, in fiscal 1964. This brought the total to 1,998,252 cooperators on 648,655,183 acres in district conservation programs.

During the year these cooperators prepared 108,380 new conservation plans on 38,459,206 acres, bringing the total to 1,515,280 plans on 475,049,352 acres. They revised 35,708 plans on 20,677,495 acres.

In addition to individual farm and ranch conservation plans, SCS helped prepare 2,832 group plans for adjoining land owners.

Conservation Applied to the Land.—Establishment of conservation practices on the land—the end result of conservation efforts—showed impressive gains on many fronts in fiscal 1964.

Soil conservation district cooperators and participants in other programs receiving SCS assistance established 30,588,354 acres of conservation cropping systems, an increase of 34 percent over the record of 1963. They also practiced contour farming on 7,110,693 acres, an increase of 16 percent; crop residue use on 23,434,450 acres, an increase of 27 percent; and stripcropping on 846,496 acres, an increase of 27 percent.

Total range and pasture seeding amounted to 3,015,775 acres, slightly less than in the previous year. Total tree planting, including farmstead windbreaks, was 365,563 acres, a decline of 2 percent from a year ago, but farmstead windbreak plantings of 39,115 acres were 79 percent more than in 1963.

Cooperators built 66,242 farm ponds, or 23 percent more than in 1963; 36,012 miles of terraces, or 11 percent less; and 115,689 acres of grassed waterways, or 7 percent less. They established conservation irrigation water management on 3,118,131 acres, or 29 percent more than a year ago, and completed irrigation land leveling on 452,058 acres, 12 percent less than in 1963.

Cooperators developed upland wildlife habitat on 193,726 acres, an increase of 28 percent, and wetland wildlife habitat on 76,431 acres, an increase of 11 percent.

Watershed Protection

Small Watershed Projects.—The authorization in 1964 of 112 watersheds for planning under Public Law 566 brought the total to 1,002, or 47 percent of the applications received to date. State and local authorities have again recognized the growing planning load with a 17-percent increase in non-Federal funds for planning. Their estimated contributions amounted to more than $2.3 million in fiscal 1964.

Ninety-six projects were approved for operations during fiscal year 1964, the largest number in any year to date and the third year of an upward trend. Initial agreements for construction were signed

in 46 projects located in 30 States, making almost 400 projects that have entered the construction stage out of 569 approved for Federal assistance in the installation of works of improvement.

Local sponsoring organizations have acquired more than 16,500 easements and rights-of-way valued at about $24 million.

All land treatment and structural measures have been completed in 66 projects located in 29 States. Eleven were completed in fiscal 1964. Structural measures have been completed in 41 additional projects.

Multipurpose Projects.—Almost 44 percent of all the projects in operation have multiple objectives combining watershed protection and flood prevention with such purposes as recreation, fish and wildlife, irrigation, drainage, and municipal water supply. A year ago the figure was only 38 percent. Sixty percent of the projects approved in 1964 are multipurpose, compared to 13 percent of those approved in 1956.

Other Watershed Projects.—Work plans were prepared for 9 subwatersheds in the 11 major river watersheds authorized for flood prevention work. The work plans cover 350,000 acres and bring the total to 230 work plans on 17,668,000 acres, or 57 percent of the authorized area.

Construction work is complete in one watershed. Buffalo Creek in New York. Almost 60 miles of stream channel erosion was controlled to reduce siltation in the Buffalo harbor.

All works of improvement have been installed in 48 of the 54 pilot watershed projects. Three more are scheduled for completion in 1965, and 3 will continue in operation after 1965.

River Basin Surveys

The Department of Agriculture cooperated in 30 river basin surveys and investigations in fiscal 1964. SCS has overall departmental re-

Summary of Progress, Fiscal Year 1964
Soil and Water Conservation in the United States

Progress items	Accomplished in fiscal year 1964— By use of funds under all SCS programs	By State employees & other agencies	Total reportable progress	Cumulative to June 30, 1964
Individual Conservation Plans and Related Services				
District cooperators .. No.	115,604	168	115,772	1,998,252
District cooperators . . acres.....	41,543,843	22,922	41,566,765	648,655,183
Cooperators canceled .. No	69,850	31	69,881	—
Cooperators canceled . . acres....	20,934,909	4,129	20,939,038	—
Landowners assisted .. No.	1,106,823	16,978	1,123,801	—
Services provided .. No.	3,298,338	50,224	3,348,562	—
Owners applying practices..No...	745,403	8,022	753,425	—
Basic plans prepared:				
Farm..No.	99,383	830	100,213	1,440,246
Ranch..No.	4,628	1	4,629	56,858
Other..No.	3,538	—	3,538	18,176
(Total basic plans).....	(107,549)	(831)	(108,380)	(1,515,280)
Farm . . acres.....	21,326,223	152,784	21,479,007	295,443,995
Ranch . . acres	16,571,450	80	16,571,530	176,376,555
Other . . acres.....	408,669	—	408,669	3,228,802
(Total basic plans, acres) ...	(38,306,342)	(152,864)	(38,459,206)	(475,049,352)
Basic plans canceled:				
Farm..No.	43,436	282	43,718	—
Ranch..No.	1,804	—	1,804	—
Other..No.	589	—	589	—
(Total plans canceled.....	(45,829)	(282)	(46,111)	—
Farm..acres	8,469,640	51,087	8,520,727	—
Ranch..acres	5,869,332	—	5,869,332	—
Other..acres	23,766	—	23,766	—
(Total plans canceled, acres)	(14,362,738)	(51,087)	(14,413,825)	—
Basic plans revised:				
Farm..No.	32,873	188	33,061	—
Ranch..No.	2,482	—	2,482	—
Other..No.	165	—	165	—
(Total plans revised)	(35,520)	(188)	(35,708)	—
Farm . . acres.....	9,724,912	41,149	9,766,061	—
Ranch . . acres.....	10,851,131	—	10,851,131	—
Other . . acres	60,303	—	60,303	—
(Total plans revised, acres).	(20,636,346)	(41,149)	(20,677,495)	—
Consultive Services				
Services provided .. No.	82,999	950	83,949	—
Operating Units				
Total operating units .. No.	—	—	—	4,750,182
Total operating units . . acres....	—	—	—	1,346,318,560
Other units .. No.	—	—	—	1,194,660
Group Conservation Plans and Services				
Irrigation:				
Group investigations .. No.	1,193	—	1,193	5,750
Group investigations . . acres..	683,624	—	683,624	6,923,229
Group plans prepared .. No. ...	735	—	735	4,704
Group plans prepared . . acres.	472,558	—	472,558	5,323,166
Landowners in group .. No. ...	6,327	—	6,327	71,513
Drainage :				
Group investigations .. No. ...	1,979	63	2,042	22,566
Group investigations . . acres..	745,999	11,327	757,326	14,850,644
Group plans prepared .. No. ...	1,773	57	1,830	24,509
Group plans prepared . . acres.	648,072	7,391	655,463	14,403,486
Landowners in group .. No. ...	9,056	190	9,246	134,223
Erosion control—Flood prevention:				
Group investigations .. No. ...	288	14	302	1,544
Group investigations . . acres..	1,030,579	2,251	1,032,830	5,905,711
Group plans prepared .. No. ...	220	12	232	1,222
Group plans prepared . . acres..	1,085,389	2,247	1,087,636	4,723,338
Landowners in group .. No. ...	1,282	23	1,305	15,023
Wildlife-Recreation:				
Group investigations .. No. ...	37	—	37	102
Group investigations . . acres.	112,873	—	112,873	791,009
Group plans prepared .. No. ...	35	—	35	63
Group plans prepared . . acres	62,945	—	62,945	162,415
Landowners in group .. No. ...	356	—	356	568
Total group services .. No. ...	44,879	999	45,878	—

Summary of Progress, Fiscal Year 1964—Continued

Progress items	Accomplished in fiscal year 1964— By use of funds under all SCS programs	By State employees & other agencies	Total reportable progress	Cumulative to June 30, 1964
Great Plains Conservation Program				
Applications received .. No.	4,488	—	4,488	20,853
Applications received .. acres....	6,349,275	—	6,349,275	43,624,807
Contracts signed .. No.	3,719	—	3,719	16,121
Contracts signed .. acres	5,453,644	—	5,453,644	33,882,548
Contract modifications .. No. ...	12,714	—	12,714	50,415
Contracts terminated:				
By mutual consent .. No.	56	—	56	270
By mutual consent .. acres....	82,637	—	82,637	645,789
For cause .. No.	58	—	58	290
For cause .. acres.....	55,192	—	55,192	268,188
By expiration .. No.	1,141	—	1,141	2,674
By expiration .. acres	1,651,081	—	1,651,081	4,146,342
(Total terminations .. No.).	(1,255)	—	(1,255)	(3,234)
(Total terminations .. acres)	(1,788,910)	—	(1,788,910)	(5,060,319)
Cropland before GP contract, acres	997,758	—	997,758	4,751,684
Planned cropland conversion, acres	248,626	—	248,626	1,112,333
Agricultural Conservation Program				
Referrals received F.Y.1964 .. No.	357,976	95	358,071	—
Referrals received P.Y.1963 .. No.	—	—	—	352,664
Referrals serviced F.Y.1964 .. No.	343,557	4,389	347,946	—
Referrals serviced P.Y.1963 .. No.	—	—	—	341,072
Cropland Conversion Program				
Forms ASCS-312 referred to SCS .. No.	19	—	19	—
Assistance completed .. No.	29	—	29	—
CCP referrals received .. No. ...	430	—	430	—
CCP referrals serviced .. No.	403	3	406	—
Soil Surveys				
Standard soil surveys:				
High intensity mapping .. acres	1,831,750	143,235	1,974,985	23,874,790
Med. intensity mapping .. acres	29,451,759	1,818,544	31,270,303	438,766,640
Low intensity mapping .. acres	10,461,611	1,106,664	11,568,275	63,927,769
(Total mapping)	(41,745,120)	(3,068,443)	(44,813,563)	(526,569,199)
High intensity conversions .. acres	803,930	3,782	807,712	—
Med. intensity convers. .. acres	16,303,267	279,675	16,582,942	—
Low intensity convers. .. acres	774,548	9,671	784,219	—
(Total conversions)	(17,881,745)	(293,128)	(18,174,873)	—
Reconnaissance mapping .. acres.	1,098,534	81,681	1,180,215	9,746,500
Reconnaissance conversions .. acres	71,597	3,280	74,877	—
Soil conservation surveys .. acres	2,666,984	141,084	2,808,068	296,012,777
Soil conservation surveys canceled or converted .. acres..	29,398,559	88,921	29,487,480	—
Supplemental soil surveys .. acres	1,188,020	6,398	1,194,418	—
Snow Surveys & Water Supply Forecasting				
Snow course measurements .. No.	3,301	1,171	4,472	—
Aerial snow marker readings..No.	500	225	725	—
Mountain precipitation gage readings .. No.	1,082	140	1,222	—
Soil moisture readings .. No.	1,184	177	1,361	—
River stations for which numerical forecasts issued..No.	400	—	400	—
Numerical forecasts issued .. No.	2,132	—	2,132	—
Income-Producing Recreation Enterprises				
Landowners with one or more income-producing recreation enterprises .. No. ..	9,395	1	9,396	26,165
Landowners with recreation enterprises as primary income source .. No.	644	—	644	2,125
Landowners with recreation enterprises as primary income source .. acres.....	206,361	—	206,361	536,751
Public Recreation Developments				
Developments established as part of a watershed project .. No. .	6	—	6	18

sponsibility for these surveys, conducted by SCS, Economic Research Service, and Forest Service in cooperation with other Federal and State agencies.

The recommendation by the Senate Select Committee on National Water Resources that comprehensive plans be developed for all major river basins by 1970 has been adopted as an objective of the Administration.

The first coordinated river basin planning budgets were prepared by the concerned Federal agencies for fiscal year 1964. The 1965 estimates are being submitted as a coordinated budget for each river basin. This procedure is helping to establish the Department of Agriculture as a co-partner with the Departments of the Army, Interior, and Health, Education, and Welfare in river basin planning.

The following river basin surveys were in progress during the fiscal year:

Type I surveys, providing a general analysis of each region, for the Ohio River, Upper Mississippi River, and Missouri River Regions.

Type II surveys, providing in addition plans for specific proposals for projects during the next 10 to 15 years, in 15 river basins.

Type IV surveys, being made with State water resource agencies and other Federal agencies, in 12 river basins.

Great Plains Conservation Program

Out of the 422 counties authorized to participate in the Great Plains Conservation Program, 392 had been so designated by June 30, 1964. Land owners and operators signed 3,719 contracts covering complete conservation plans on 5,453,644 acres during the year. This brought the total to 16,121 cost-sharing contracts covering 33,882,548 acres. A backlog of 4,732 applications awaiting technical and financial assistance was carried over to the new fiscal year when

new appropriations would become available.

Contracts signed in fiscal 1964 include plans for 248,626 acres of cropland conversion, or approximately a fourth of the existing cropland on these farms and ranches. Participating landowners in the program to date have planned 1,112,333 acres of cropland conversion, or 23 percent of their cropland before planning.

Establishment of the conservation practices called for by the contracts moved forward at an accelerated pace. The total amount of cost-shares paid was $8,951,720, a 27-percent increase over the $7,069,570 the previous year.

Establishment of permanent vegetative cover continued to be the most important practice in the program, accounting for $1,559,798 of the cost-shares paid. Participants established or reestablished 185,656 acres of new vegetation under this practice, compared to 161,800 acres in 1963, a gain of 15 percent.

Soil Surveys

During fiscal 1964 soil mapping by SCS and cooperating agencies was completed on 65,796,504 acres, compared to 68,324,100 in 1963. Ninety-one percent, or 60,085,491 acres, was mapped with SCS funds appropriated for technical assistance to soil conservation districts.

The cumulative total of 822,581,976 acres mapped to date (published and unpublished) in a way suitable for farm and ranch planning is about 36 percent of the total land area of the United States or 43 percent of the 48 mainland States.

Work was in progress on January 1, 1964, on 2,338 soil survey areas, including 710 progressive surveys.

Service to Urban Areas.—The use of soil surveys in land use planning in urban and urban-fringe areas continued to increase in 1964. Many local planning commissions and consultants are en-

Summary of Progress, Fiscal Year 1964—Continued

Practices	Accomplished in fiscal year 1964— By use of funds under all SCS programs	By State employees & other agencies[1]	Total reportable progress	On the land June 30, 1964
Conservation Practices Applied				
Bedding . . acres	25,609	1,142	26,751	358,071
Brush and weed control . . acres.	5,113,018	28,064	5,141,082	30,353,703
Irrigation canal or lateral . . miles	380	20	400	37,022
Cattle walkway . . miles	8	—	8	235
Chiseling . . acres	429,284	1,031	430,315	2,988,343
Clearing and snagging . . miles..	125	—	125	1,634
Conservation cropping system . . acres	30,446,096	142,258	30,588,354	140,616,764
Contour farming . . acres	7,064,976	45,717	7,110,693	40,836,189
Contour furrowing . . acres	59,758	7	59,765	600,415
Contouring orchard, etc. . . acres	16,649	70	16,719	206,529
Controlled burning . . acres	475,589	360	475,949	2,975,227
Cover and green manure crop . . acres	5,436,923	28,723	5,465,646	24,697,760
Critical area planting . . acres	44,435	22,432	66,867	1,186,148
Crop residue use . . acres	23,330,381	104,069	23,434,450	102,162,588
Cutback border . . feet	342,752	—	342,752	6,043,380
Dam, diversion .. No.	923	8	931	17,098
Dam, multiple-purpose .. No.	217	6	223	4,736
Debris basin, No.	2,917	19	2,936	84,336
Range deferred grazing . . acres	20,803,498	445	20,803,943	47,751,686
Desilting area . . acres	174	—	174	2,211
Dikes and levees . . miles	238	6	244	7,780
Irrigation ditch and canal lining . . miles	1,503	53	1,556	17,350
Ditchbank seeding .. miles	1,400	61	1,461	15,376
Diversions .. miles	3,063	45	3,108	85,646
Dune stabilization . . acres	1,728	9	1,737	68,489
Emergency tillage . . acres	262,751	1	262,752	3,111,362
Farm pond .. No.	65,070	1,172	66,242	1,354,041
Farmstead and feedlot windbreak .. acres	38,703	412	39,115	581,460
Field border planting . . miles	1,180	79	1,259	37,703
Irrigation field ditch . . miles	3,665	329	3,994	113,734
Field windbreak . . miles	4,135	134	4,269	68,317
Firebreaks . . miles	13,574	52	13,626	123,993
Fish and crop rotation . . acres..	14,193	—	14,193	25,544
Fishpond stocking .. No.	36,523	445	36,968	677,103
Fishpond management .. No.	12,282	28	12,310	71,255
Floodwater diversions . . feet	62,291	1,300	63,591	923,100
Floodwater-retarding structure .. No.	843	1	844	6,949
Floodway . . miles	34	3	37	349
Grade stabilization structure..No.	6,868	196	7,064	122,815
Grasses & legumes in rotation . . acres	1,800,540	22,671	1,823,211	14,465,138
Grassed waterway or outlet . . acres	113,999	1,690	115,689	2,021,370
Hedgerow planting . . miles	459	69	528	32,044
Hillside ditch . . miles	377	115	492	8,699
Irrigation pipeline . . miles	3,987	74	4,061	38,457
Irrigation storage reservoir .. No.	2,174	11	2,185	35,342
Irrigation system, sprinkler .. No.	4,121	69	4,190	80,115
Irrigation system, surface and subsurface .. No.	5,076	201	5,277	90,716
Irrigation system, tailwater recovery .. No.	640	7	647	5,735
Irrigation water management . . acres	3,110,598	7,533	3,118,131	9,715,734
Land clearing . . acres	648,391	5,497	653,888	10,465,043
Drainage land grading . . acres..	23,520	1,719	25,239	143,796
Irrigation land leveling . . acres..	440,901	11,157	452,058	8,027,430
Land smoothing . . acres	318,077	2,102	320,179	3,999,584
Livestock exclusion . . acres	1,015,782	5,124	1,020,906	16,319,475
Minimum tillage . . acres	1,104,209	1,342	1,105,551	4,994,500
Drainage main or lateral . . miles	8,012	686	8,698	273,065
Mole drain . . miles	817	—	817	1,733
Mulching . . acres	40,644	123	40,767	373,780
Mulch planting . . acres	62,623	25	62,648	149,462
Woodland natural seeding . . acres	100,860	4,008	104,868	2,516,768
Obstruction removal . . acres	44,606	178	44,784	595,455

Summary of Progress, Fiscal Year 1964—Continued

Practices	Accomplished in fiscal year 1964— By use of funds under all SCS programs	By State employees & other agencies [1]	Total reportable progress	On the land June 30, 1964
Conservation Practices Applied—Continued				
Pasture and hayland renovation . . acres	1,532,402	13,387	1,545,789	16,610,034
Pasture and hayland planting . . acres	2,463,774	35,684	2,499,458	42,289,340
Pipeline for livestock water . . miles	1,695	29	1,724	12,460
Pitting . . acres	16,491	—	16,491	166,402
Plow planting . . acres	129,219	395	129,614	1,170,285
Pond sealing or lining . . No.	845	6	851	5,056
Pasture proper use . . acres	8,624,019	51,904	8,675,923	26,553,902
Range proper use . . acres	84,036,584	5,845	84,042,429	179,155,340
Woodland proper grazing . . acres	1,779,332	1,003	1,780,335	8,883,386
Pumped well drain . . No.	5	1	6	101
Pumping plant for water control . . No.	2,433	109	2,542	36,551
Range renovation . . acres	28,101	6	28,101	1,563,916
Range seeding on converted land . . acres	169,438	50	169,488	4,134,869
Range seeding . . acres	346,100	729	346,829	7,282,546
(Total range seeding, acres)	(515,538)	(779)	(516,317)	(11,417,415)
Irrigation pit or regulating reservoir . . No.	3,480	18	3,498	35,091
Regulating water in drainage systems . . acres	113,756	13	113,769	775,302
Rock barrier . . feet	11,218	—	11,218	272,756
Range rotation—deferred grazing . . acres	2,716,041	44	2,716,085	8,646,387
Row arrangement . . acres	358,609	340	358,949	1,755,759
Rotation grazing . . acres	4,318,254	42,074	4,360,328	12,814,327
Recreation access road . . feet	2,339,872	129,189	2,469,061	10,300,902
Recreation area stabilization . . acres	506	4	510	12,382
Recreation area planting . . acres	12,071	83	12,154	38,655
Recreation area pruning and thinning . . acres	5,778	364	6,142	18,337
Recreation land grading and shaping . . acres	14,949	45	14,994	22,284
Recreation trail & walkway . . feet	906,034	38,631	944,665	4,432,261
Spoilbank spreading . . miles	5,074	95	5,169	110,432
Spring development . . No.	4,714	60	4,774	77,650
Stock trail . . miles	201	1	202	2,875
Streambank protection . . miles	227	3	230	3,604
Stream channel improvement . . miles	696	3	699	8,072
Stream channel stabilization . . feet	75,437	1,900	77,337	2,366,833
Stripcropping, contour . . acres	218,377	5,677	224,054	5,105,593
Stripcropping, field . . acres	93,767	332	94,099	2,166,763
Stripcropping, wind . . acres	527,986	357	528,343	12,116,837
(Total stripcropping, acres)	(840,130)	(6,366)	(846,496)	(19,389,193)
Structures for water control . . No.	83,769	704	84,473	1,304,441
Stubble mulching . . acres	3,919,938	7,860	3,927,798	17,526,407
Drainage field ditch . . miles	7,790	287	8,077	147,408
Terrace, basin . . miles	93	11	104	2,190
Terrace, gradient . . miles	18,359	270	18,629	848,178
Terrace, level . . miles	13,595	163	13,758	342,184
Terrace, parallel . . miles	3,444	77	3,521	29,894
(Total terraces, miles)	(35,491)	(521)	(36,012)	(1,222,446)
Tile drain . . miles	25,207	1,625	26,832	598,830
Tile system structure . . No.	9,200	579	9,779	140,523
Toxic salt reduction . . acres	72,641	197	72,838	905,587
Tree planting . . acres	305,122	21,326	326,448	10,728,892
Trough or tank . . No.	11,634	325	11,959	256,729
Vegetative barrier . . miles	250	187	437	5,614
Vertical drain . . No.	23	—	23	1,293
Waterspreading . . acres	41,550	687	42,237	810,798
Well . . No.	7,624	303	7,927	298,065
Wildlife habitat preservation . . acres	1,379,576	2,542	1,382,118	6,147,848

tering into cooperative agreements to cost-share soil surveys. In 1964 SCS had 37 such agreements.

In addition, several States are appropriating funds to accelerate soil surveys. Some outside agencies, like the State Department of Commerce in Massachusetts, have published maps and reports made by SCS for planning agencies.

Soil surveys as part of regular soil conservation district operations are in progress in 364 areas in which there is urban expansion. Fieldwork has been completed in 125 of these areas, of which 79 have been published. Soil surveys are planned to start in 29 new areas having urban expansion in fiscal 1965.

Publication. — Thirty-four soil surveys were published during the year, and 35 edited manuscripts were sent to the Government Printing Office. Between 35 and 40 soil survey manuscripts will be available for editing and preparation for the printer in fiscal year 1965.

Interpretations.— All manuscripts now contain soil interpretations for engineering uses. Where woodland or range is an important land use, soil interpretations for these uses are included also.

Most of the new reports now contain soil interpretations for urban development, sewage disposal, recreational development, wildlife interpretations, and interpretations for special crops such as fruits and vegetables.

Classification.—A list of the established and tentative soil series of the United States, current as of July 15, 1963, was prepared and distributed during the fiscal year. The total number of series is approximately 8,000. During the year, 470 new series were proposed and 196 tentative series dropped after they had been tested.

Work was continued on revision of the soil classification system with a further trial grouping of series into families and with modifications of some definitions. Plans were made for adoption of the new

system in fiscal 1965.

A group of articles on the new classification system was published early in the fiscal year as one full issue of *Soil Science*.

Advances in Technology

Agronomy.—The interpretation of soils information and correlation of crop and pasture yields on benchmark soils progressed significantly during the year.

Using recent research information on the factors affecting soil blowing, SCS agronomists have developed "wind erosion curves" that work unit staffs can use effectively in planning for adequate wind erosion control in all the Great Plains States. These guides are useful in preparing specifications for stubble mulching and crop residue use.

The equation is also useful in the vegetable growing areas of New Jersey and Delaware where soil blowing damages the quality of the crop. Soil movement there must be reduced to less than 2 tons per acre, and the equation tells how far apart the permanent and temporary wind barriers need to be to limit soil blowing to this level.

Improvements in establishing vegetation on critical areas in watershed projects have led to significant reductions in cost. For example, a $12,000 saving was made in a watershed in the Northeast by eliminating the use of topsoil on the fill and borrow areas where the soil material was of a nature permitting direct seeding. In Massachusetts the cost of vegetating structures was reduced from $1,200-$1,700 to $500-$700 per acre.

Range Conservation.—SCS is extending its assistance in range conservation into areas where native pastures formerly were given little attention. Gratifying progress was made in the Corn Belt where 124 SCS employees were given training in plant identification, recognition of range sites and conditions, and livestock management. Basic soil and plant evaluations were started. A professional range conservationist was added to the staff in Mississippi.

To meet the needs of multiple-use conservation programs, SCS has modified range survey procedures to provide basic information for planning all rangeland uses.

Analysis of vegetation composition now includes all the production of all the plants—including twigs, leaves, fruits, nuts, and stems—rather than only the herbage grazed by domestic livestock, as was the former practice. The resulting information reflects the true productivity of different sites and shows the value of the vegetation for game, recreation, and other uses as well as for livestock grazing.

Woodland Conservation. — The SCS devised and put into use in 1964 a new "woodland information stick" to aid fieldmen in analyzing woodland problems with land owners and operators. On the stick, which is 25 inches long, are printed scales for measuring diameter and height of trees and data for otherwise evaluating stands of trees by short-cut methods. In effect, the stick is a condensed handbook and checklist of information to be used by nonforesters in considering woodlands in conservation planning.

Biology.—The system of soil interpretations for wildlife production and conservation developed in the Northeast was applied with minor modifications to the Corn Belt and Western States, and to a limited extent in the Great Plains.

The SCS continued to develop techniques to make inland wetlands and farm ponds more productive of migratory waterfowl, particularly of wild ducks.

Plant Materials.—Biologists and plant materials specialists are searching for plants that can be used to improve waterfowl food sources in the Western States. More than 500 separate plant accessions gathered from around the world have been placed under observation at various plant materials centers in the Pacific flyway. From this systematic field study, a number of superior plants have

Summary of Progress, Fiscal Year 1964—Continued

Practices	Accomplished in fiscal year 1964— By use of funds under all SCS programs	By State employees & other agencies[1]	Total reportable progress	On the land June 30, 1964
Conservation Practices Applied—Continued				
Wildlife wetland development . . acres	75,201	1,230	76,431	842,031
Wildlife habitat development . . acres	192,105	1,621	193,726	2,485,123
Wildlife wetland preservation . . acres	159,511	271	159,782	1,202,684
Wildlife watering facility . . No.	316	18	334	4,803
Woodland direct seeding . . acres	12,588	306	12,894	315,516
Woodland harvest cutting . . acres	839,301	8,596	847,897	12,338,684
Woodland intermediate cutting . . acres	905,285	3,358	908,643	12,083,965
Woodland interplanting . . acres	27,278	822	28,100	711,473
Woodland pruning . . acres	15,469	2,294	17,763	272,364
Woodland thinning . . acres	63,766	2,877	66,643	1,563,021
Woodland underplanting . . acres	25,085	2,207	27,292	620,435
Woodland weeding . . acres	453,456	7,754	461,210	8,215,960
Land Use Conversions[2]				
Cropland to grassland . . acres	1,241,608	1,854	1,243,462	6,812,528
Cropland to woodland . . acres	90,353	164	90,517	864,024
Cropland to wildlife-recreation . . acres	31,890	274	32,164	313,546
Cropland to "other" . . acres	57,147	422	57,569	1,380,282
All other uses to cropland . . acres	217,307	656	217,963	1,976,042
All other uses (except cropland) to wildlife-recreation . . acres	161,696	159	161,855	1,181,576

[1] Includes certain practices on the lands of new SCD cooperators applied without SCS assistance.
[2] Conversions on the land June 30, 1964, are estimates of conversions since July 1, 1962.

evolved. One plant, a smartweed (*Polygonum*), has produced up to 5 tons of choice waterfowl food per acre. Other superior food plants include strains of bulrush (*Scirpus*) and duckmillet (*Echinochloa*).

Plant materials centers also are providing other new plants for recreation and wildlife land uses. One center has tested and developed species and techniques for shooting-preserve cover. Another works closely with a wildlife experiment station in observing wildlife use of conservation plants.

A whole range of new plant materials will be useful in watershed treatment, on streambanks, flood pool margins, detention structures, and the like, as well as having wildlife and aesthetic values.

Engineering.—The overall design work load continued to increase significantly in 1964, but no critical imbalance in seasonal workload was reported.

"Specifications for Construction Contracts" was published and distributed. The following design criteria and standards were completed: (1) Program No. 4, "Culverts Rating Program;" (2) Interim Report 1 on "Proportioning Earth Dams;" (3) "Criteria and Procedures for the Structural Design of Standard Covered Risers;" (4) "Example Plans for Standard Covered Risers;" (5) "Standards for Drop Inlet Spillways."

A consolidated report of four surveys of the condition of principal spillway pipe conduits was published.

Investigations of irrigated land needing drainage were made to find ways to prevent the accumulation of saline and alkali salts. The findings emphasize the need for superior engineering design, good materials, and careful construction to cope with the problem.

A revised national standard on dikes and levees and one on pumping plants were issued.

Much progress was made during the year in the installation of structures for the control of active gullies that interfere with the installation and maintenance of soil and water conservation practices.

National standards were developed for a group of practices having special applications to recreation developments.

Farm equipment manufacturers continue to enlarge their equipment and increase its speed of operation. This places emphasis on the importance of obtaining the best terrace alinement in all cases. Smoothing and grading upland fields prior to terrace construction are on the increase.

The benefits of the electronic computer work of last year began to be realized this year. The program computes storm runoff of a stream resulting from any synthetic or actual rainstorm, taking into account all conditions that have a bearing on runoff.

New standards for concrete irrigation pipelines were developed with the American Concrete Pipe Association; for wrapped aluminum pipe, in cooperation with the Sprinkler Irrigation Association; and for plastic irrigation pipelines, in cooperation with the Society of the Plastics Industry. Standards and specifications were prepared for planning and installing permanent sprinkler irrigation systems in citrus groves of Florida.

Emphasis continues on the improvement of irrigation water management practices, but the accomplishment in this work is spotty. Courses in irrigation water management have been started in the western training centers to help overcome this deficiency.

Water Supply Forecasting.—Four new snow courses were established in the Yukon River Basin north of the Arctic Circle.

Extensive tests of the accuracy of various types of snow sampling equipment were conducted during the past season. An expanded program in the testing and evaluation of the pressure pillow as an automatic snow gage was continued during the year in a pilot study on Mt. Hood. The results were so successful that similar equipment is to be installed for several States in the coming fiscal year. Some of these installations will be equipped with telemetry.

Conservation Needs Inventory.—During 1964, data from the Conservation Needs Inventory were used in many ways, some of the basic sample soil data were further refined, and progress was made on plans for updating the Inventory.

Foreign Programs

During the year the Soil Conservation Service operated in Tunisia and Algeria, under contractual agreement with the Agency for International Development (AID) of the Department of State, whereby SCS assumes operating responsibility for technical phases of the programs. In addition, a number of specialists were made available to AID for work in other parts of the world.

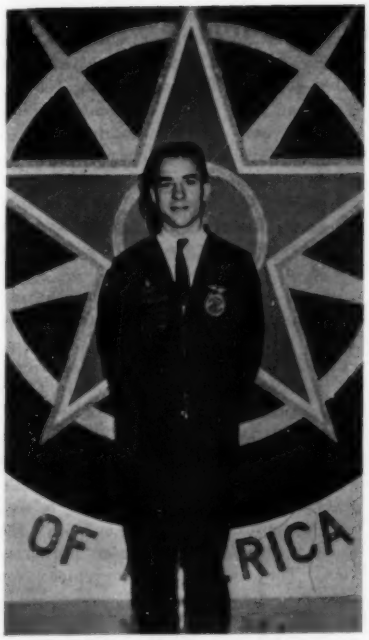
During the period 1961-63, SCS provided training to a total of 1,059 foreign nationals from 63 countries at more than 50 field locations in the United States.

Personnel Management

In August 1963, the USDA Boards of Civil Service Examiners were abolished and agency boards established. Three SCS boards were organized with headquarters at Salt Lake City, Fort Worth, and Washington, D. C.

Incentive awards of some kind were made to a total of 1,982 SCS employees in 1964. Of these, 289 were for employee suggestions for improvement put into effect, and 985 awards were for superior performance. Five individuals and 2 units received Superior Service Honor Awards from the Secretary.

Training programs were strengthened by use of the facilities of other Government agencies and sources outside the Government service. ♦



Robert E. Hendershot.

Conservation Work Wins FFA Award

WINNER of the 1964 Future Farmers of America award in soil and water conservation is Robert E. Hendershot, 18, of Baltimore, Ohio.

Robert is on a one-third partnership with his father, Roy W. Hendershot, on a 187-acre dairy farm that has cooperated with the Fairfield Soil and Water Conservation District since 1953. There are 74 head of cattle in the dairy herd, and they have 6 brood sows.

With the assistance of the Soil Conservation Service and his vocational agriculture teacher, John T. Ricketts, Robert has planned a complete field layout, crop rotation, and water disposal system for the home farm.

Included in his conservation work has been the establishment of sod waterways seeded to fescue and bluegrass, ¼ mile of multiflora rose hedge, construction of 2 ponds, 14,000 feet of tile drainage, and planting nearly 2,000 trees.

Robert has been an officer of his FFA Chapter, Star Chapter Farmer, and winner of the DeKalb award. He is continuing his study of agriculture at Ohio State University.—PEARL L. FOGLE, *Area Conservationist, SCS, Lancaster Ohio.* ♦

1964 Water Year Varies in West

Streamflow during 1964 was near average over the Columbia and Missouri basins according to the fall water supply summary issued by the Water Supply Forecasting Branch, SCS, Portland, Oreg. Elsewhere in the West, however, there were varying degrees of shortage.

Streamflow from the Sierras both to the Central Valley of California and for east slope streams in Nevada was extremely deficient. The 1964 water year in California was the driest since 1954-55.

In summary, total streamflow for 1964 during the snowmelt season was about 105 percent of average for the Columbia River at The Dalles, Oreg., 115 percent for the upper Missouri in Montana, 65 percent for the Colorado into Lake Powell, and less than 50 percent for the Rio Grande. The flow of California's Central Valley streams was roughly 60 percent of average. ♦

Iowa Farmers Find Self Help Pays Off

THIRTEEN gully control structures and 34 acres of grassed waterways have convinced residents of Big Park watershed in Crawford County, Iowa, that they can overcome the flood and erosion problems which have plagued them over the years.

The structures and waterways represent the work progress on a small watershed program begun in 1960 to combat devastation by gullying on productive Boyer River Valley land.

The project resulted from the efforts of area farmers who organized the Big Park Watershed Association and, after exhausting all local resources in applying conservation measures, sought watershed improvement help from the Crawford County Soil Conservation District.

When an application was approved for Federal assistance through the Watershed Protection and Flood Prevention Act of 1954 a work plan was drawn calling for installation of large-gully control structures to be paid for by the Federal Government.

When completed the project will include 22 structures and 57 acres of grassed waterways. Meanwhile, local farmers are continuing to improve the land with additional conservation practices.—JIM MANDER, *Work Unit Conservationist, SCS, Denison, Iowa.* ♦

Conservation Films Help Buy Conservation Books

Audubon film showings at Aberdeen, S. Dak., have made possible purchases of 81 books on conservation of natural resources for the public library and two Federal student loans at Northern State College.

The Aberdeen Garden Club sponsored the showings and used the resulting income to buy the books.

Two contributions of $100 each to the Student Loan Fund satisfied requirements for two $1,000 Federal loans to worthy students through the National Defense Education Act.

The public library, which moved into a new building last spring, recently was awarded $1,000 by the Book of the Month Club for outstanding work in the community. ♦

Waterfowl Tomorrow. EDITED BY JOSEPH P. LINDUSKA. *1964. U. S. Department of the Interior. Washington, D. C. 770 pp., illus., map. $4.00.*

"Waterfowl Tomorrow" puts between two covers more commentary on the subject than this reviewer has seen elsewhere. Joseph P. Linduska, editor, and Arnold L. Nelson, managing editor, have included writings of more than 100 contributors in this book illustrated by Bob Hines. Wide coverage is given field observations, research, regulatory measures, conservation effort, resource manipulation, and numerous other facets of waterfowl conditions on the North American continent.

The intended audience appears to include the complete range of interests in the subject: Novice, naturalist, student, conservationist, policy maker, and biology specialist. The content is a mixture of poetry, catchy chapter headings, descriptive writing, argumentation, field notes, and interpretative research reporting. Anyone with any concern for waterfowl will find the book interesting reading and a handy reference.

The professional soil and water conservationist will find that much of his work contributes to the welfare of waterfowl. Throughout the book the point is made that agronomic practices used in modern conservation farming provide a major share of the food consumed by the more abundant species.

Water manipulation by engineering structures is credited for its contribution to waterfowl habitat. But many drainage efforts are deplored for their deleterious effects in nesting areas.

Properly constructed and managed farm ponds, lakes, and marsh areas can provide new breeding, nesting, and resting areas within, as well as beyond, natural ranges of the species. Vegetative practices, including natural as well as improved plant species and varieties, can influence production and orderly harvest of waterfowl.

Every duck and goose hunter who reads the book should better understand the contribution to his sport of farmers and ranchers who practice good land use and conservation of land and water resources.—LLOYD E. PARTAIN, *Assistant to the Administrator.*

Soil and Water. Volume 1, Number 1. *September, 1964. Published by the Soil Conservation and Rivers Control Council of New Zealand. Wellington, N. Z. 24 pp. and cover, illus. No price indicated.*

This first issue of a new soil and water conservation magazine undoubtedly will prove to be a milestone in the progress of conservation around the world. Experience with our own *Soil Conservation* magazine, which it resembles, suggests that the people of New Zealand will be stimulated to greater achievements in land and water husbandry by this new medium of communication.

The first issue contains experience stories and informational articles about many subjects that would seem quite at home in our magazine: Regrassing eroded pastureland, a river flood control scheme, plant materials center, hydrology, and use of fertilizers.

The issue also takes note of the visit of Administrator D. A. Williams to New Zealand to consult with authorities about the administrative organization needed to carry forward the expanded conservation and land use programs in that country.

New Publications

How To Plan a Shooting Field in the Northeast and Corn Belt. BY PHILIP F. ALLAN, OLAN W. DILLON, JR., AND H. GRANVILLE SMITH. *1964. U. S. Dept. Agr. Leaflet 532. 8 pp., illus.* One or more good "shooting fields" where game birds can be released shortly before the hunt is an essential feature of a successful shooting preserve. This guide gives practical suggestions for the layout of such a field to minimize loss of birds and give the hunter a safe, pleasant outdoor experience. It recommends desirable crops, grasses, and shrubs for the Northeast and a sample plan map illustrates an effective arrangement of different kinds of cover within the field.

Focus on Resource Conservation: I. Outdoor Recreation: Its Impact Today. *48 pp., illus. $1.00.* **II. Using and Managing Our Water Resources.** *40 pp., illus. $1.* **III. Policy in Land Management: A Symposium.** *11 pp., illus. 50¢. 1964. Soil Conservation Society of America, Ankeny, Iowa.* This series of brochures on conservation subjects consists of selections of related articles previously published in the *Journal of Soil and Water Conservation.* They will prove convenient for reference by professional conservationists, for use in schools, and by others interested in specific aspects of the resource field.

Action for Outdoor Recreation for America. BY CORC (*The Citizens Committee for the Outdoor Recreation Resources Review Commission Report.*) *1964. Washington, D. C. 37 pp., illus. 25¢.* A revision of an earlier digest of the ORRRC Report with added information about the Land and Water Conservation Fund Act of 1964 and examples of State and local action.

Some Training and Services Needed in Agriculture. BY PROCTOR CAMPBELL. *1964. U. S. Dept. Agr. Misc. Pub. 966. 13 pp., illus.* This analysis of commodity use and production patterns in rural America and related needs of farmers for training will be of interest to those concerned with economic development.

Growing Loblolly and Shortleaf Pine in the Mid-South. BY CHARLES X. GRANO. *1964. U. S. Dept. Agr. Farmers' Bul. 2102. 25 pp., illus.* How to size up woodlands, apply needed practices, and market timber.

Protecting Trees Against Damage from Construction Work. *1964. U. S. Dept. Agr. Agr. Inf. Bul. 285. 26 pp., illus.* Hints about an important problem in suburban and other construction

16 Plants Poisonous to Livestock in the Western States. *1964. U. S. Dept. Agr. Farmers' Bul. 2106. 49 pp., illus.* Descriptions of plants and suggestions for reducing livestock losses. ♦

From the Administrator:

Good Management

ALMOST everyone knows, from reading the daily newspaper, that the Federal Government is making considerable efforts to reduce its cost and increase its efficiency. Taxpayers—all of us—are keenly interested in these efforts, since we have both a civic and personal interest in better and less expensive Government.

Recently, in responding to a request of the Secretary of Agriculture, we reviewed the gains made in management by the Soil Conservation Service in the past 4 years. I was agreeably surprised to find the total value of these to be almost $60 million. I felt especially good about this huge sum because I knew also that countless small improvements of great variety made by many field offices had not been counted—mostly because of the cost of collecting the information, to say nothing of field frustration over any more reports.

Very roughly, these improvements amount to an average of about $15 million a year. And, I'm sure that all conservationists would be delighted to see an increase of this amount in the SCS budget. Actually, that's just about what this amounts to.

What it means in addition, though, is that people in the Service have been exerting themselves to get their jobs done at the lowest possible cost—always, I hope, without sacrificing quality! This is an effort to stretch the budgeted dollars—and a $15 million stretch is something every man and woman in the Service can be proud of.

The values accrued in many ways. I don't want to leave the impression that these were "savings"—a popular, but much misused word. They were costs we avoided, or more services we provided at no increased cost, or shifts in time spent on a less necessary activity to an activity of greater importance. Let me illustrate some of them:

Men in work units reduced the amount of travel in providing technical services to land owners and operators. They did this by planning and scheduling their travel more efficiently than before. The total value of the reduction translates to the equivalent of 174 man-years of time or about $1,131,000. This was in 1963. In 1964 we didn't collect comparable figures, but Service-wide we reduced expenditures for travel by 15 percent, a net reduction of $632,000.

In 1963 the value of the increased technical services made available to land owners and operators amounted to more than $7 million—at no increased cost to the Government. In 1964, the value amounted to more than $11 million.

We consolidated five training centers into four, and realized $42,700 that could be diverted to other work. We avoided a cost of about $86,000 by using a correspondence (home-study) course in management, instead of trying to bring the men to a training center.

We are widening slightly the span of control of our area conservationists. They formerly supervised an average of about 8 work units each. Now they're supervising nearly 12. That is, fewer area conservationists are now doing more—and the change adds up to about $350,000 worth of personnel time now devoted to other kinds of work.

Our progress reports tell us that we have not reduced the effectiveness of our work by these economies. With hardly any increase at all in the total manpower or funds expended, we have given help with more farm plans, more watershed projects, more Great Plains contracts, and the establishment of more conservation on the land than in the year before.

The percent of land owners and operators receiving assistance from SCS who responded by applying one or more conservation practices to the land increased from 64.2 percent in 1963 to 67 percent in 1964. What better test could there be of the effectiveness of our service?

Of very great importance are the funds contributed by States for soil survey work, watershed planning parties, and assistance to districts. Full credit must be accorded to the many State governments for their cooperation in these respects. These are costs the Federal Government does not have to bear, and they aggregate some $7 million a year.

We have realized several million dollars by cutting down desk audits, reducing records and filed documents, reducing inspections, eliminating many reports that had outlived their usefulness, and using computers for reporting as well as for watershed planning and for helping design storage capacities of floodwater-retarding structures.

This is a good record, and one I am proud to publish. It took imagination and good hard work to achieve it. And it hasn't faltered, nor, in my judgment, is it likely to.

I look forward to greater achievement with all the men and women in this Service of ours, and with the cooperation of soil conservation districts, State governments, and many others.

Conservation denotes efficiency in land and water use. It is highly appropriate that this efficiency also permeates the structure and operation of the SCS.

—D. A. WILLIAMS.

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Sagebrush Gives Way To Tall Grass

ROBERT Wangsgard, a Huntsville, Utah, rancher, is proud of his results and his role as a pioneer in control of sagebrush by spraying.

It was in 1960 that Mr. Wangsgard first sprayed 500 acres. At that time he used a fixed wing aircraft. Since then he has used airplane and helicopter with good results.

At one time the sagebrush stood taller than the hood of a jeep and now, 2 years since it was sprayed, the grass is that tall.

The Huntsville pioneer became a cooperator with the Ogden Valley Soil Conservation District in 1960 and received planning assistance from the Soil Conservation Service. The sagebrush spraying was one of several measures adopted in his ranch conservation plan. Good conservation is paying off for a rancher who "... can't afford to have sagebrush growing when the same area can produce grass for livestock." — JOHN K. HORTIN, *Work Unit Conservationist, SCS, Panguitch, Utah.*

Robert Wangsgard (r., above) and his father Louis stand where sagebrush grew before it was sprayed. Now the area is covered with wheatgrass, Kentucky bluegrass, and Letterman's needlegrass. Below, Robert measures flow from one of his stock-water developments.